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1. Introduction

Chronic pain has been recognized as pain that persists past normal healing time [5] and hence lacks the acute warning function of physiological nociception [35]. Usually pain is regarded as chronic when it lasts or recurs for more than 3-6 months [29]. Chronic pain is a frequent condition, affecting an estimated 20% of people worldwide [6,9,14,15] and accounting for 15-20% of physician visits [25,28]. Chronic pain should receive greater attention as a global health priority, since adequate pain treatment is a human right, and it is the duty of any health-care system to provide it [4,14].

The current version of the International Classification of Diseases (ICD) of the World Health Organisation (WHO) includes some diagnostic codes for chronic pain conditions, but these diagnoses do not reflect the actual epidemiology of chronic pain, nor are they categorized in a systematic manner. The ICD is the preeminent tool for coding diagnoses and documenting investigations or therapeutic measures within the healthcare systems of many countries. In addition, ICD codes are commonly used to report target diseases and comorbidities of participants in clinical research. Consequently, the current lack of adequate coding in the ICD makes the acquisition of accurate epidemiological data related to chronic pain difficult, prevents adequate billing for healthcare expenses related to pain treatment, and hinders the development and implementation of new therapies [11,12,17,23,27,31,37].

Responding to these shortcomings, the International Association for the Study of Pain (IASP) contacted the WHO and established a Task Force for the Classification of Chronic Pain. The IASP Task Force, which comprises pain experts from across the globe [19], has developed a new and pragmatic classification of chronic pain for the upcoming 11th revision of the ICD. The goal is to create a classification system that is applicable in primary care as well as in clinical settings for specialized pain management.

A major challenge in this process was finding a rational principle of classification that suits the different types of chronic pain and fits into the general ICD-11 framework. Pain categories are variably defined based on perceived location (headache), etiology (cancer pain) or the primarily affected anatomical system (neuropathic pain). Some diagnoses of pain defy these classification principles (fibromyalgia).

This problem is not unique to the classification of pain, but exists throughout the ICD. The IASP Task Force decided to give first priority to pain etiology, followed by underlying pathophysiological mechanisms, and finally body site. Developing this multilayered classification was greatly facilitated by a novel principle of assigning diagnostic codes in ICD-11, termed “multiple parenting”. Multiple parenting allows the same diagnosis to be subsumed under more than one category. Each diagnosis retains one category as primary parent, but is cross-referenced to other categories that function as secondary parents.

The new ICD category for “Chronic Pain” comprises the most common clinically relevant disorders. These disorders were divided into seven groups (Fig. 1): (i) chronic primary pain; (ii) chronic cancer pain; (iii) chronic posttraumatic and postsurgical pain; (iv) chronic neuropathic pain; (v) chronic headache and orofacial pain; (vi) chronic visceral pain; (vii) chronic musculoskeletal pain. Experts assigned to each group are responsible for the definition of diagnostic criteria and the selection of the diagnoses to be included under these subcategories of chronic pain. Thanks to Bedirhan Üstün and Robert Jakob of the WHO, these pain diagnoses are now integrated in the beta version of ICD-11

(<http://id.who.int/icd/entity/1581976053>). The Task Force is generating content models for single entities to describe their clinical characteristics. Following peer review overseen by the WHO Steering Committee, the classification of chronic pain will be voted into action by the World Health Assembly in 2017.

2. Classification of chronic pain

Chronic pain was defined as persistent or recurrent pain lasting longer than 3 months. This definition according to pain duration has the advantage that it is clear and operationalized. It includes the vast majority of relevant conditions. Conditions in which an earlier diagnosis of chronic pain is justified will be included with their own set of criteria.

Optional specifiers for each diagnosis record evidence of psychosocial factors and the severity of the pain. Pain severity can be graded based on pain intensity, pain-related distress and functional impairment.

2.1 Chronic primary pain

Chronic primary pain is pain in one or more anatomic regions that persists or recurs for longer than 3 months and is associated with emotional distress or functional disability (interference with activities of daily life and participation in social roles) and that cannot be better explained by another chronic pain condition. This is a new phenomenological definition, created because for many forms of chronic pain the etiology is unknown. Common conditions such as e.g. back pain that is neither identified as musculoskeletal or neuropathic pain, chronic widespread pain, fibromyalgia and irritable bowel syndrome will be found in this section. The term “primary pain” was chosen in close liaison with the ICD-11 revision committee, who felt this was the most widely acceptable term, in particular from a non-specialist perspective.

2.2. Chronic cancer pain

Pain is a frequent and debilitating accompaniment of cancer [8] that as yet has not been represented in the ICD. The Task Force decided to list it as a separate entity because there are specific treatment guidelines [7,38]. Chronic cancer pain includes pain caused by the cancer itself (the primary tumor or metastases) and pain that is caused by the cancer treatment (surgical, chemotherapy, radiotherapy, other). Cancer-related pain will be subdivided based

on location into visceral, bony (or musculoskeletal) and somatosensory (neuropathic), and will be described as either continuous (background pain) or intermittent (episodic pain) if associated with physical movement or clinical procedures. The treatment-related pain will be cross-referenced from the chapters on postsurgical pain and neuropathic pain.

2.3 Chronic postsurgical and posttraumatic pain

Since pain that persists beyond normal healing is frequent after surgery and some types of injuries, the entity of postsurgical and posttraumatic pain was created. This is defined as pain that develops after a surgical procedure or a tissue injury (involving any trauma including burns) and persists at least 3 months after surgery or tissue trauma [26]; this is a definition of exclusion, as all other causes of pain (infection, recurring malignancy) as well as pain from a pre-existing pain problem need to be excluded. In view of the different causality, as well as from a medicolegal point of view, a separation between postsurgical pain and pain after all other trauma is regarded as useful. Depending on the type of surgery, chronic postsurgical pain often is neuropathic pain (on average 30% of cases with a range from 6 to 54% and more) [16]. Pain including such a neuropathic component is usually more severe than nociceptive pain and often affects the quality of life more adversely [21].

2.4 Chronic neuropathic pain

Chronic neuropathic pain is caused by a lesion or disease of the somatosensory nervous system [20,22]. The somatosensory nervous system provides information about the body including skin, musculoskeletal and visceral organs. Neuropathic pain may be spontaneous or evoked, as an increased response to a painful stimulus (hyperalgesia) or a painful response to a normally nonpainful stimulus (allodynia). The diagnosis of neuropathic pain requires a history of nervous system injury, for example, by a stroke, nerve trauma or diabetic neuropathy, and a neuroanatomically plausible distribution of the pain [22]. For the

identification of *definite* neuropathic pain, it is necessary to demonstrate the lesion or disease involving the nervous system, for example, by imaging, biopsy, neurophysiological or laboratory tests. In addition, negative or positive sensory signs compatible with the innervation territory of the lesioned nervous structure must be present [36]. Diagnostic entities within this category will be divided into conditions of peripheral or central neuropathic pain.

2.5 Chronic headache and orofacial pain

The International Headache Society (IHS) has created a headache classification [18] that is implemented in full in the chapter on neurology. This classification differentiates between primary (idiopathic), secondary (symptomatic) headache and orofacial pain including cranial neuralgias. In the section on chronic pain, only chronic headache and chronic orofacial pain will be included. Chronic headache and orofacial pain is defined as headaches or orofacial pains that occur on at least 50% of the days during at least 3 months. For most purposes, patients receive a diagnosis according to the headache phenotypes or orofacial pains that they currently present. The section will list the most frequent chronic headache conditions.

The most common chronic orofacial pains are temporomandibular disorders [32], which have been included in this subchapter of chronic pain. Chronic orofacial pain can be a localized presentation of a primary headache [2]. This is common in the trigeminal autonomic cephalalgias, less common in migraines and rare in tension-type headache. Several chronic orofacial pains such as post-traumatic trigeminal neuropathic pain [3], persistent idiopathic orofacial pain, and burning mouth syndrome are cross-referenced to e.g. primary chronic pain and neuropathic pain. The temporal definition of ‘chronic’ has been extrapolated from that of chronic headaches [1].

2.6 Chronic visceral pain

Chronic visceral pain is persistent or recurrent pain that originates from the internal organs of the head/neck region and the thoracic, abdominal and pelvic cavities [24,33,34]. The pain is usually perceived in the somatic tissues of the body wall (skin, subcutis, muscle) in areas that receive the same sensory innervation as the internal organ at the origin of the symptom (referred visceral pain) [13]. In these areas, secondary hyperalgesia (increased sensitivity to painful stimuli in areas other than the primary site of the nociceptive input) often occurs [30]; the intensity of the symptom may bear no relationship with the extent of the internal damage/noxious visceral stimulation [10]. The section on visceral pain will be subdivided according to the major underlying mechanisms, i.e. persistent inflammation, vascular mechanisms (ischemia, thrombosis), obstruction/distension, traction/compression, combined mechanisms (e.g., obstruction and inflammation concurrently), and referral from other locations. Pain due to cancer will be cross-referenced to the chapter chronic cancer pain and pain due to functional or unexplained mechanisms to chronic primary pain.

2.7 Chronic musculoskeletal pain

Chronic musculoskeletal pain is defined as persistent or recurrent pain that arises as part of a disease process directly affecting bone(s), joint(s), muscle(s) or related soft tissue(s).

According to the constraints of the approach as described in the Introduction, this category is therefore limited to *nociceptive* pain and does not include pain that may be perceived in musculoskeletal tissues but does not arise therefrom, such as the pain of compression neuropathy or somatic referred pain. The entities subsumed in this approach include those characterized by persistent inflammation of infectious, auto-immune or metabolic etiology, such as rheumatoid arthritis, and by structural changes affecting bones, joints, tendons or muscles, such as symptomatic osteoarthritis. Musculoskeletal pain of neuropathic origin will be cross-referenced to neuropathic pain. Well-described apparent musculoskeletal conditions

for which the causes are incompletely understood, such as non-specific back pain or chronic widespread pain, will be included in the section on chronic primary pain.

3. Outlook

Irrespective of its etiology, chronic pain is a major source of suffering and requires special treatment and care. Our proposal may not represent a perfect solution for the classification of all manifestations of chronic pain. However, it does represent the first systematic approach to implementing a classification of chronic pain in the ICD. It is based on international expertise and agreement, and consistent with the requirements of the ICD regarding structure and format of content models. The seven major categories of chronic pain were identified after considerable research and discussion. They represent a compromise between comprehensiveness and practical applicability of the classification system. Several clinically important conditions that were neglected in former ICD revisions will now be mentioned, e.g. chronic cancer pain or chronic neuropathic pain. Etiological factors, pain intensity and disability related to pain will be reflected. With the introduction of chronic primary pain as a new diagnostic entity, the classification recognizes conditions that affect a broad group of pain patients and would be neglected in etiologically defined categories. We hope that this classification strengthens the representation of chronic pain conditions in clinical practice and research and welcome comments to improve it further.

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Figure legend:

Fig. 1: Organizational chart of Task Force, IASP and WHO interactions. The IASP Task Force was created by the IASP council and its scope defined in direct consultation of the chairs (RDT and WR) with WHO representatives in 2012. The Task Force reports to the IASP Council on an annual basis.

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Appendix: Structure of the Chapter on Chronic Pain

Chronic Pain

(Persistent or recurrent pain lasting longer than 3 months)

1 Chronic primary pain

- 1.1 Widespread chronic primary pain (including fibromyalgia syndrome)
- 1.2 Localized chronic primary pain (including non-specific back pain, chronic pelvic pain)
- 1.x Other chronic primary pain
- 1.z Chronic primary pain NOS

2 Chronic cancer pain

- 2.1 Chronic pain due to cancer and metastases
- 2.2 Chronic Chemotherapy-induced pain
[Primary parent: Chronic neuropathic pain]
- 2.3 Chronic Pain due to cancer surgery
[Primary parent: Chronic postsurgical and posttraumatic pain]
- 2.4 Chronic Pain due to radiotherapy
- 2.x Other chronic pain related to cancer
- 2.z Chronic cancer pain NOS

3 Chronic postsurgical and posttraumatic pain

- 3.1 Chronic postsurgical pain
- 3.2 Chronic posttraumatic pain
- 3.x Other chronic postsurgical and posttraumatic pain
- 3.z Chronic postsurgical and posttraumatic pain NOS

4 Chronic neuropathic pain

- 4.1 Peripheral neuropathic pain
- 4.2 Central neuropathic pain
- 4.x Other neuropathic pain
- 4.z Neuropathic pain NOS

5 Chronic headache and orofacial pain

- 5.1 Chronic primary headaches*
- 5.2 Chronic secondary headaches*
- 5.3 Chronic orofacial pains**
- 5.z Headache and orofacial pain NOS*

6 Chronic visceral pain

- 6.1 Chronic visceral pain from persistent inflammation
- 6.2 Chronic visceral pain from vascular mechanisms
- 6.3 Chronic visceral pain from obstruction/distension
- 6.4 Chronic visceral pain from traction/compression
- 6.5 Chronic visceral pain from combined mechanisms
- 6.6 Chronic visceral pain referred from other locations

- 6.7 Chronic visceral pain from cancer
[Primary parent: Chronic cancer pain]
- 6.8 Functional or unexplained chronic visceral pain
[Primary parent: Chronic primary pain]
- 6.x Other chronic visceral pain
- 6.z Chronic visceral pain NOS

7 Chronic musculoskeletal pain

- 7.1 Chronic musculoskeletal pain from persistent inflammation
- 7.2 Chronic musculoskeletal pain from structural osteo-articular changes
- 7.3 Chronic musculoskeletal pain due to disease of the nervous system
[All neuropathic pain will be classified under 4. Chronic neuropathic pain.
Here other chronic musculoskeletal pain originating from diseases of the
nervous system, e.g. spastic pain]
- 7.4 Chronic non-specific musculoskeletal pain
[Primary parent: Chronic primary pain]
- 7.x Other chronic musculoskeletal pain syndromes
- 7.z Chronic musculoskeletal pain NOS

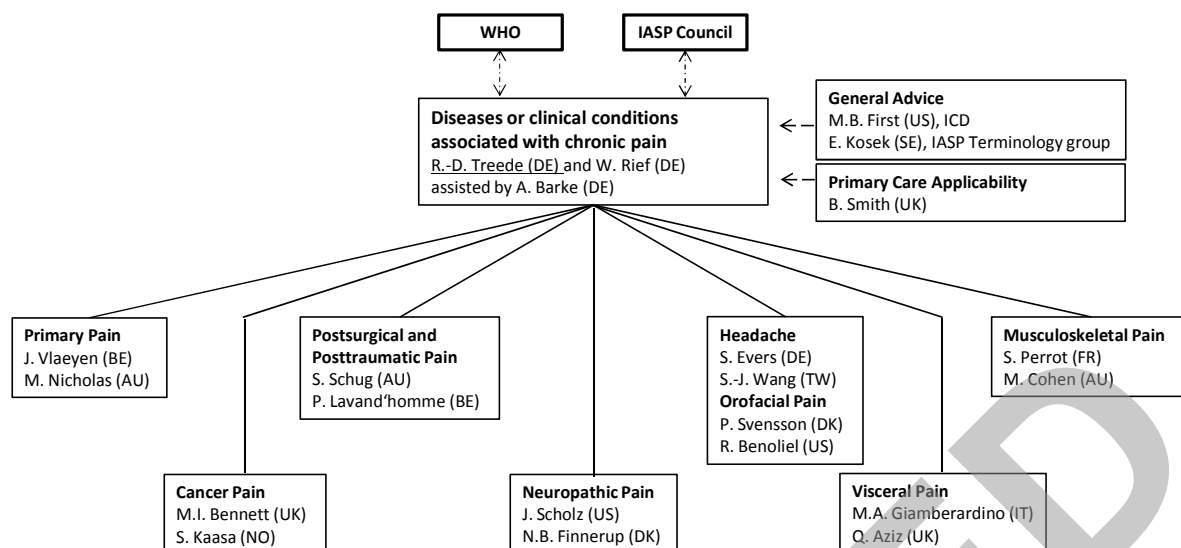
Notes:

* These disorders have in part been renumbered as compared to the ICHD-3

** #5.3 is not part of the ICHD-3

Table 1. Glossary of ICD-11 terms

WHO Term	Explanation
(Diagnostic) entity	The unit of classification, e.g. individual diagnoses and diagnostic chapters.
Content model	A structured framework that contains all information required to describe an entity within the ICD. A content model contains information on an entity's name, its definition, the affected body system or structure, the disease course, its etiology, treatment and limitations in physical, emotional or social functioning associated with the entity.
Parent/child	Entities are arranged in a hierarchical order, with a 'parent' entity at the top, e.g., 'chronic pain', and child entities subsumed underneath, e.g., 'chronic neuropathic pain'. Child entities can be parent to the next level, e.g., 'chronic neuropathic pain' is a parent relative to 'chronic peripheral neuropathic pain'.
Multiple Parenting	Entities can have more than one parent. An entity such as 'chronic chemotherapy-induced pain' has, e.g., 'chronic cancer pain' and 'chronic neuropathic pain' as parents. One of them is designated as the 'primary' parent, but the entity can be found under either heading. Multiple parenting thus allows one entity to be included in two or more diagnostic categories.



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